BLM - SURPRISE FIELD OFFICE

Nevada Cowhead Allotment #01113

DOCUMENTATION FORM FOR DETERMINATIONS:
ACHIEVEMENT OF RANGELAND HEALTH STANDARDS,
CONTRIBUTING FACTORS AND APPROPRIATE ACTION PRIORITIES

THIS FORM DOCUMENTS, FOR THE INDICATED AREA: (1) DETERMINATIONS AND SUPPORTING RATIONALE REGARDING IF FUNDAMENTAL RANGELAND HEALTH CONDITIONS CITED IN 43 CFR 4180.1 EXIST IN THESE AREAS; (2) DETERMINATIONS, IN CASES WHERE ONE OR MORE CONDITIONS OF FUNDAMENTAL RANGELAND HEALTH DO NOT EXIST, REGARDING THE STANDARD(S) THAT IS (ARE) NOT ACHIEVED; (3) DETERMINATIONS, IN THOSE CASES WHERE ONE OR MORE STANDARDS ARE NOT ACHIEVED, REGARDING THE CONTRIBUTING FACTOR(S) THAT IS (ARE) PREVENTING STANDARD(S) ACHIEVEMENT OR IS (ARE)PREVENTING SIGNIFICANT PROGRESS TOWARDS ITS (THEIR) ACHIEVEMENT; AND, (4) THE INFORMATION THAT WAS EXAMINED THAT SUPPORT THESE DETERMINATIONS.

Indicate the date(s) or period the information review occurred: 1983 to December 2008.

PART I - IDENTIFICATION OF RELEVANT AREA

A. Indicate area where these determinations and rationale apply:

1. ☐ **Site** (Specific Geographic Area) within Management Unit (allotment or pasture):
   Allotment name/no.: _ _____
   Place name: _____
   Legal location (if needed to ID site): ___._____
   Approximate size in acres: __acres_____
   (or linear length if lotic riparian)
2. X **Management Unit** (allotment or pasture - list name / no. / acres):
   Nevada Cowhead Allotment # 01113 - 41,531 acres (3,071 acres private, 38,460 acres public)
3. ☐ **Landscape** (identify by groups of management units, or by watershed if cross-cutting MU's and list):
   _____
4. ☐ **Other Stratification** (identify - e.g., all riparian areas in XYZ Pasture):
   _____

PART II - IDENTIFICATION OF INFORMATION REVIEWED

The following information (e.g. monitoring, literature, personal communication, etc.) was considered to determine standards attainment and, if applicable, contributing factor(s) to their non-achievement and failure to make significant progress towards their achievement.

Summary of Rangeland Health Assessment Field Data Indicators Observed at the evaluation sites on the Nevada Cowhead Allotment, October 2008:

Rangeland Health Attributes		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	∑
Soils	Soils/Site Stability Indicators 1-9 & 11		**2**		**1**	**27**	**30**
Hydrologic	Hydrologic Function Indicators 1-5, 8-11 &14		**3**	**1**	**3**	**23**	**30**
Biotic	Biotic Integrity Indicators 8-9 & 11-17		**2**	**2**	**5**	**18**	**27**

(Field data indicators in greater detail and by ecological site are found in Attachment A)

Discussion of Specific Indicators (as needed):

Nevada Cowhead Allotment 2008 Evaluation Sites:

Soil Mapping Unit Number	Ecological Site Number	Ecological Site Name	% of Allotment
1165	NV 23 - 31	Claypan 10 - 14" P.Z.	42%
1165	NV 23 – 21	Scabland 10-14"	<10% (Inclusion)
1175	NV 23 - 59	Gravelly Claypan 10-12" P.Z.	24%

Data of amounts of cover, litter, etc., collected in the field and compared with the ecological site descriptions can be found in appendix B for the information discussed below.

SMU #1165, NV 23 - 31, Claypan 10 - 14" P.Z.
Two moderate to extreme departures, and two moderate departures were observed for the Claypan 10-14" P.Z. site. The two moderate to extreme departures were observed for "pedestals and/or terracettes", and "Functional/Structural groups". Pedestals are considered to be an abnormal occurrence in this ecological site, yet pedestals were observed on a large amount of the perennial grasses present. This site was substantially lacking deep-rooted cool season perennial bunchgrasses, which have the potential to be the dominant grass on this ecological Site (eco-site). They were replaced by shallow-rooted cool season perennial bunchgrasses, which are a minor component of this eco-site at full potential. Moderate departures were observed for "Plant community composition and distribution relative to infiltration", and "Annual production". Both of these moderate departures are a result of the noted lack of deep-rooted cool season perennial bunchgrasses throughout the soil map units. Bluebunch wheatgrass and Thurber's needlegrass both produce large amount s of biomass, which is lacking without their presence. Although Poa spp (bluegrass) has increased, making up the difference in production to some degree, the relatively small amount of production created by bluegrass cannot fully compensate for the production lost from lack of bluebunch wheatgrass and Thurber's needlegrass. The lack of deep-rooted bunchgrasses is also the cause for the departure in "Plant community composition and distribution relative to infiltration", as these deep-rooted grasses are integral in proper water infiltration on this soil type.

SMU #1175, NV 23 - 59, Gravelly Claypan 10-12" P.Z.
Two moderate to extreme departures were observed for the Gravelly Claypan 10-12" P.Z. site. The two moderate to extreme departures were for "Plant community composition and distribution relative to infiltration", and "Functional/Structural groups". This site was substantially lacking in deep-rooted cool season perennial bunchgrasses, which have the potential to be the dominant grass at this eco-site. They were replaced by shallow-rooted cool season perennial bunchgrasses, which are a sub-dominant to minor component of this eco-site at full potential. The lack of deep-rooted bunchgrasses is also the cause for the departure in "Plant community composition and distribution relative to infiltration", as these deep-rooted grasses are integral in proper water infiltration in this soil type. With the Thurber's Needlegrass and Webber's Needlegrass lacking, annual production was estimated at 20 – 40% of PNC. Litter created by these grass species is also lacking, but overall litter amounts are adequate, due in part to litter produced by cheatgrass, Japanese brome and annual forbs.

SMU #1175, NV 23 - 21, Scabland 10-14" P.Z.
One moderate to extreme departure for "Pedestals and/or terracettes" was observed for the Scabland 10-14" P.Z. site. Pedestals are considered to be an abnormal occurrence in this ecological site, yet pedestals were observed on a large amount of the perennial grasses present. Moderate departures were observed for "Invasive plants". Japanese brome, cheatgrass and western juniper were found to be scattered throughout the site, although they were not the dominant plants.

A. Information relevant to **UPLAND SOILS, STANDARD 1**:
Northeast California/Northwest Nevada Resource Advisory Council Standards and Guidelines:
Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform, and exhibit functional biological, chemical, and physical characteristics.

Meaning that: Precipitation is able to enter the soil surface and move through the soil profile at a rate appropriate to soil type, climate, and landform; the soil is adequately protected against human caused wind or water erosion; and the soil fertility is maintained at, or improved to, the appropriate level.

Indicator(s) Observed Information Reference (i.e. identify the information source used by type and date)

Comments / Remarks: **Answers to the following were based on the field data collected on the Nevada Cowhead Allotment #1113 in October of 2008, along with the interpretation and analysis of management records, and observations on the allotment from 1982 to 2008. Soils and ecological site information was obtained from the 1999 Soil Survey of Washoe County, North Part.**

Criteria

1. IS ground cover (vegetation, litter, and other types of ground cover, such as rock fragments) sufficient to protect sites from accelerated erosion? **No, although the attribute rating for Soil/Site Stability was rated as stable for all three sites. The Gravelly Claypan 10-12" and Claypan 10-14" sites were lacking the dominant perennial grass. Ocular observations during the collection of the Line-Point Intercept and Gap Intercept transect data were made on several other ecological sites. These sites were found to have sufficient ground cover (vegetation, litter, rock, etc.) to protect sites from accelerated erosion.**

2. IS evidence of wind and water erosion, such as rills and gullies, pedestalling, scour, or sheet erosion, and deposition of dunes either absent or, if present, does not exceed what is natural for the site? **No, both the Claypan 10-12" and Scabland 10-14" site were found to have pedestals on a large amount of the bunchgrasses. Pedestals are considered to be rare occurrences in each of these ecological sites when they are functioning at full potential. The Gravelly Claypan 10-12" site, representing 24% of the allotment, had pedestalling on the grasses, however it was not severe or as abundant as on the Claypan 10-12 and Scabland sites.**

3. IS vegetation vigorous and diverse in species composition and age class, and does it reflect the Potential Natural Community or Desired Plant Community for the site? **Not on most sites. Although the existing vegetation appears vigorous on each site, two sites are missing the deep-rooted native perennial bunchgrasses that have the potential of being the dominant grasses on these sites. The Claypan 10-14" site was missing bluebunch wheatgrass and Thurber's needlegrass. The Gravelly Claypan 10-12" site was also missing Thurber's needlegrass and Webber's needlegrass which have the potential to be the dominant grasses on this site.**

B. Information relevant to the **STREAM HEALTH, STANDARD 2**:
Northeast California/Northwest Nevada Resource Advisory Council Standards and Guidelines:
Stream channel form and function are characteristic for the soil type, climate, and landform.

Meaning that: Channel gradient, pool frequency, width to depth ratio, roughness, sinuosity, and sediment transport are able to function naturally and are characteristic of the soil type, climate, and landform.

Comments / Remarks: Two creeks exist on the allotment, Horse Creek and Rock Creek. Both are tributaries to Twelve Mile Creek, and there are no barriers or dams along either creek. Rock Creek is fenced to exclude livestock and Horse Creek is fenced into two pastures: Lower and Upper Horse Creek pastures. Lower Horse Creek is authorized for 1 week of trailing cattle use every year and Upper Horse Creek has a 1 month season of use every other year. All pastures/exclosures use combinations of rimrock and gap fencing in addition to 4 strand barbed wire fencing.

Implementation monitoring on these creeks consists of residual stubble height thresholds, and grazing compliance. Effectiveness monitoring uses Greenline vegetation methodological and stream cross-section surveys, and this information has been used to determine how stocking rates and the timing of grazing are affecting the resource values associated with these creeks. Since the 1990's eight photo points were established: six along Horse Creek and two along Rock Creek, to document vegetation cover changes over time. Greenline transects were last conducted at all six stations along Horse Creek in the late summer of 2006. In 2008, the two stations at Rock Creek were recorded (see results below). Riparian functional assessments (RFA's) were last conducted in 2008 and indicate that both Rock Creek and Horse Creek are properly functioning.

Rock Creek flows along its entire length for a short time in the spring, fed by snow melt in the upper elevations of the allotment. Otherwise Rock Creek is dry except for a short reach that is fed by perennial springs that flow for about ½ mile towards the north end of Rock Creek. There are perennial intermittent pools associated with this reach. The 450 acre Rock Creek exclosure was built in 2002, and encompasses the perennial portions of Rock Creek. Both implementation and effectiveness monitoring stations have been conducted within the exclosure.

Horse Creek is perennial, being fed by springs in its upper watershed and at various points along its length. Often in the early spring season there is increased runoff from snow melt and other significant precipitation events. Five of the implementation and effectiveness monitoring stations are located in the Lower Horse Creek Pasture and the sixth is located in the smaller Upper Horse Creek Pasture. The 2,283 acre Lower Horse Creek pasture consists of about 19% (424 acres) private land. The 173 acre Upper Horse Creek pasture consists of 129 acres (76%) private land.

Criteria

1. ARE gravel bars and other coarse textured stream deposits successfully colonized and stabilized with woody riparian species? **Yes. A comparison of late 1990's to present photo points in Horse Creek and Rock Creek show that point bars are being re-vegetated with willows and riparian vegetation throughout all reaches.**

2. IS streambank vegetation vigorous and diverse, mostly perennial, and holding/protecting banks during high streamflow events? **Yes. Streambank vegetation is vigorous, mostly perennial and capable of protecting streambanks. The 2008 greenline survey for Rock Creek was conducted on two stations. The average bank stability rating for Rock Creek was high (7.64), with a range of 7.42 to 7.86. The 2006 average bank stability rating for six stations on Horse Creek was 6.42, with a range of 3.85 to 7.90. Classes for bank stability ratings are as follows: 0-2= very poor, 3-4 = poor, 5-6 = moderate, 7-8 = good, 9-10 = excellent. Ratings and techniques are from the Monitoring the Vegetation Resources in Riparian Areas, USDA Forest Service Gen. Tech. Rep. RMRS-GTR-47. 2000.**

3. DOES the stream water surface have a high degree of shading, resulting in cooler water in summer and reduced icing in winter? **Yes. Photo points taken since the 1990's show that willow, cottonwood and grass cover have increased dramatically in Rock Creek. Horse Creek has changed less over time but has much more abundant cover of grasses. Both systems also receive early morning and evening shading due to their location in rimrock canyons. The air and water temperature data collected since the late 1990's, indicates that water temperatures in both Rock Creek and Horse Creek are currently more effectively buffered from high summer air temperatures by the increased vegetation.**

4. ARE portions of the primary floodplain frequently flooded (inundated every 1 to 5 years)? **Yes. This is well documented by the presence of litter and other debris trapped in willow branches and on the active floodplain of both Rock Creek and Horse Creek.**

C. Information relevant to the **WATER QUALITY, STANDARD 3**:

Northeast California/Northwest Nevada Resource Advisory Council Standards and Guidelines:

Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the State standards within the respective boundaries of the States of California and Nevada.

Comments / Remarks: In 2003, stream surveys were conducted on both Rock Creek and Horse Creek for use in the Surprise Resource Management Plans. Surveys used BLM Tech. Note 283 – Techniques for Conducting Stream Habitat Surveys on National Resource Lands, USDA Forest Service General Technical Report INT-GTR- 346 R1/R4 (Northern/Intermountain Regions) Fish and Fish Habitat Standard Inventory Procedures Handbook. The survey was updated by BLM Eagle Lake Field Office resource staff to make use of modern techniques and equipment. The survey consisted of transects run at various stations to determine water and riparian habitat suitability for aquatic animals. Three stations each consisting of four transects were surveyed along Horse Creek and one station consisting of five transects were surveyed on Rock Creek. Measurements were made of such parameters as total channel and stream width, depth of stream, number of pools, type of pool and stream substrate, percent sedimentation, and measurements of pool and bank cover. One of the three stations was co-located with stations used for greenline transects. Survey notes of the aquatic macroinvertebrate community indicate that Horse Creek is "a healthy aquatic environment with little or no pollution". About 55% of areas measured were found to have characteristics "optimum" for fish habitat.

Transects for Rock Creek were also conducted in September of 2003 at one station. The aquatic habitat community discussion was similar to the Horse Creek survey however notes state that "the lack of Oligocheata, indicates that there may be no stream sediment in the stream bottom". Oligochetes are an aquatic invertebrate common in stream bottom sediments. About 63.5% of areas measured were found to have characteristics "optimum" for fish habitat.

In 2001 the USGS conducted stream surveys for Cow Head Lake tui chub in both Rock Creek and Horse Creek. That survey found Warner redband trout (*Oncorhynchus mykiss* spp.) and speckled dace (*Rhinichthys osculus*) in Rock Creek and speckled dace in Horse Creek.

Indications

1. ARE the chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen levels within the applicable requirements? Yes. **Other than water temperature, little to no information has been collected on dissolved oxygen, pH, or conductivity in these streams. As part of annual monitoring for possible effects of cattle grazing on Warner sucker, water and air temperatures have been collected on Rock Creek and Horse Creek since 1999. Results have been summarized for end-of-year reports and, data indicates that the average maximum temperature for Horse Creek is decreasing. The average**

maximum temperature for Rock Creek also appears to be dropping when compared to 2002 data however to a lesser degree than Horse Creek and this may be due to the lower water flows of Rock Creek.

2. ARE the standards for riparian, wetlands, and water bodies achieved? **Yes. Riparian functional assessments were last conducted in 2008 and indicate that both Rock Creek and Horse Creek and one unnamed spring in the allotment are properly functioning. An additional seep in the allotment was rated as functional at risk due to a 4x4 jeep trail which passes through it.**

3. DO aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants) indicate support for beneficial uses? **Yes, while Warner sucker (*Catostomus warnerensis*) are not known to occur, speckled dace and Warner redband trout occur in Rock Creek and speckled dace in Horse Creek. A wide variety of aquatic macroinvertebrates were detected in the 2003 stream. Photos indicate that woody riparian species, especially willows, have increased substantially along the riparian corridors of Rock Creek and Horse creek.**

4. ARE there acceptable results from implementation and effectiveness monitoring or changes in management to address deficiencies identified by such monitoring? **Yes, effectiveness monitoring indicates that both Rock Creek and Horse Creek are in upward trends in terms of vegetation and aquatic habitat conditions along their riparian corridors. As stated above, during the summer months the water temperatures in both Rock Creek and Horse Creek are being buffered by riparian vegetation.**

D. Information relevant to the **RIPARIAN AND WETLAND SITES, STANDARD 4**
Northeast California/Northwest Nevada Resource Advisory Council Standards and Guidelines:
Riparian and Wetland areas are in properly functioning condition and are meeting regional and local management objectives.

Comments / Remarks: **Undeveloped water sources within the Nevada Cowhead Allotment include: Deer Camp Spring, Horse Creek (Upper and Lower), Rock Creek, and an unnamed seep to the north of Horse Creek.**

Upper Horse Creek refers to a spring that feeds into Horse Creek. This spring originates to the east of Horse Creek and travels to the west to join Horse Creek. Horse Creek flows from south to north, and continues into Oregon. In 2008 this spring was rated as Proper Functioning Condition (PFC). There are aspen near the spring source that continues for .18 miles (the spring source and first .09 miles of creek are on private land); the remaining .21 miles have a combination of sedges, willow, rose, and rushes, which provide for bank stability and stream health. The aspen stand is displaying minimal age diversity. The stand is mostly older trees with a few younger trees of 6-10 feet tall and many suckers 1-2 feet tall. Many dead aspen are scattered on the ground along with an understory of young juniper 10-15 feet tall. The lack of an obvious mid-story of aspen and the current high browsing levels on the younger trees, suggests that in most years aspen are being grazed before they can get past browsing height.

Lower Horse Creek is roughly 2.5 miles long, starting at the north end of the private land which it originates and flowing into Oregon. In 1997, it was rated as PFC. The 2008 PFC rating confirmed the continued health of the Horse Creek. There is a large amount of willow, Nebraska sedge and rose throughout the system.

Rock Creek is comprised of many springs, and throughout the stream channel, there are areas of perennial water as well as areas of intermittent or seasonal flow. In 1999, Rock Creek was rated as PFC, and was rated in 2008 again as PFC. This system has shown an increase in woody species since the late 1990's, as well as an improvement in age class and structural diversity.

An unnamed intermittent seep to the north of Horse Creek provides about .25 acres of meadow that is saturated in spring and summer. The vegetation associated with this seep is diverse and vigorous; however the 4X4 road that travels directly through the west end of the seep is affecting the water flow patterns. Therefore in 2008 the seep was rated as functional at risk with no apparent trend. In 1993, it was also rated as functional at risk, with no apparent trend.

An unnamed spring hereinafter referred to as "Deer Camp" spring is a perennial spring that has an unnamed channel that flows in to Twelve-mile creek in Oregon. In 2008, the vegetation was noted as being vigorous and diverse, comprised of Nebraska sedge as well as other rushes and sedges. There is a woody component throughout the system that consists of willows. The 2008 visit to Deer Camp Spring resulted in a rating of PFC for this system. This spring was visited in 1985 and rated in 1992. Pictures were taken in 1985. In 1992 it was rated as Functional at Risk with no apparent trend.

Criteria

1. IS riparian vegetation sufficiently vigorous, mostly perennial, and sufficiently diverse in species composition, age class and life form to stabilize stream banks and shorelines? **Yes, riparian vegetation is sufficiently vigorous, mostly perennial, and sufficiently diverse in species composition, age class and life form to stabilize stream banks and shorelines.**

2. IS riparian vegetation and large woody debris well anchored and capable of withstanding high streamflow events? **Yes, riparian vegetation is well anchored and capable of withstanding high streamflow events. Large woody debris is not common in any of the riparian systems in the Nevada Cowhead Allotment. Rock Creek and Horse Creek have a large amount of volcanically derived rock, which plays a larger role in protecting these stream banks.**

3. IS accelerated erosion (as a result of human related activities) evident? **Yes, erosion from grazing is still evident in both Rock Creek and Horse Creeks however these stream systems have shown significant increases in vegetation diversity and vigor, particularly along gravel bars. Upper Horse Creek has some incised banks caused by past erosion; though the system is healing itself under current management conditions. The unnamed seep and Deer Camp Spring are both incurring erosion due to roads. However, the effects of the road on Deer Camp Spring and the unnamed seep are currently being reviewed.**

4. ARE age class and structure of woody riparian and wetland vegetation appropriate for the site? **Yes, age class and structure of woody vegetation is appropriate. Both Rock Creek and Horse Creek continue to exhibit new growth of woody species such as willows and rose. Woody species regeneration in the reach in upper Horse Creek, however is being negatively impacted by late season grazing.**

E. Information relevant to the **BIODIVERSITY STANDARD 5**:

Northeast California/Northwest Nevada Resource Advisory Council Standards and Guidelines:
Viable, healthy, productive, and diverse populations of native and desired plant and animal species, including special status species, are maintained.

Meaning that: Native and other desirable plant and animal populations are diverse, vigorous, able to reproduce, and support nutrient cycles and energy flows.

Indicator(s) Observed	Information Reference
☑ plant vigor (production, mortality, decadence)	RHA and PFC (2008), 2 bitterbrush transects surveyed from 1985 through 2008
☑ diversity of age classes	RHA and PFC (2008), bitterbrush transects
☑ recruitment	RHA and PFC (2008)
☑community structure (layers)	RHA and PFC (2008)
☑ community diversity	RHA and PFC (2008)
☑ exotic plants (or invaders)	RHA (2008)
☑ wildlife life forms present (obligate)	Field office and Nevada Department of Wildlife (NDOW) sage grouse surveys, general field office allotment monitoring e.g., PFC surveys, other data from NDOW, and Great Basin Bird Observatory data.
☑ special status species	Pygmy rabbit survey (2006), sage-grouse surveys by field office and NDOW (2002 to present), Warner sucker, speckled dace and trout (United States Geological Survey [USGS], Biological Services Division, 2001.

Comments / Remarks: Observations on wildlife are from annual field observations since 1998 and data obtained from NDOW. Species observed include elk, pronghorn antelope, mule deer, marmot, unidentified rabbit (not black-tailed), unidentified ducks, American kestrel, red-tailed hawk, golden eagle, turkey vulture, blackbird, dark-eyed junco, American robin, scrub jay California quail, belted kingfisher, mountain chickadee, flicker, and garter snake. Great Basin Bird Observatory (GBBO) data from within the allotment indicate that at least nineteen different species of birds use the allotment. No pygmy rabbit are known to occur in the allotment based on the 2006 Larrucea survey. No potential Carson wandering skipper habitat occurs within the allotment and no saltgrass communities were seen. According to the Nevada Department of Wildlife (NDOW) both occupied and potential habitat (steep rocky terrain) exists for California bighorn sheep within the allotment.

Nesting has been observed for red-tailed hawk, mourning dove, Great-horned owl, and several unidentified species of waterfowl and ground and tree nesting songbirds on the allotment. There are two active sage-grouse leks within the allotment and several more to the north in Oregon and east in California, suggesting nesting may occur within the allotment. One radio collared female was known to have nested just outside the allotment. Adult and young sage-grouse or their sign are often seen at several locations along and between Horse Creek and Rock Creek.

Garter snakes, Warner redband trout, speckled dace, and a variety of aquatic macroinvertebrates have been found in and around Rock Creek and Horse Creek.

Criteria

1. DO wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations? Yes within riparian areas and no within upland habitats. **Vegetation structure within the Claypan 10-14" and Gravelly Claypan 10-12" ecological sites is lacking due to the reduced cover of deep rooted perennial bunchgrasses. Cover of this category of vegetation has been replaced by shrub and lower statured shallow rooted perennial species. As a result, shrub interspaces are more open and the cover on the sites is generally concentrated around individual shrubs. Small mammal and bird species including sage grouse use these areas. Within the Scabland 10-14" ecological site, upland vegetation structure is acceptable, although the increase in juniper, an invasive species on this site is threatening the community. No large scale disturbances have occurred which would cause landscape level patch sizes to be different than expected.**

2. ARE a variety of age classes present for most species? **Yes**

3. IS vigor adequate to maintain desirable levels of plant and animal species to ensure reproduction and recruitment of plants and animals when favorable events occur? **Although upland plant diversity is less than optimum for sites assessed, vigor was adequate when observed in 2008**.

4. DOES the distribution of plant species and their habitats allow for reproduction and recovery from localized catastrophic events? **Yes, other than the powerline, there have been no large scale developments within the allotment and plant communities are distributed according to their natural boundaries.**

5. ARE natural disturbances, such as fire, evident, but not catastrophic? **Yes, natural disturbances, such as fire, are evident but not catastrophic. Two fires between 1963 and 2005 burned a total of approximately 374 acres within the allotment and between 1972 and 2005, there were fifteen smaller fires, most were less than 0.1 acres in size.**

6. ARE non-native plant and animal species present at acceptable levels? **Yes non-native plant and animal species are present at acceptable levels. While Japanese brome was noted at all three assessed sites and cheatgrass was noted within the Scabland 10-14" ecological site, neither of these species is dominating any of the sites. The large amount of litter recorded at each site is largely due to cheatgrass and Japanese brome. No non-native animal species are known on the allotment.**

7. ARE habitat areas sufficient to support diverse, viable, and desired populations, AND are they adequately connected with other similar habitat areas? **Yes, field office records indicate that a diverse assemblage of wildlife have been seen on the allotment over the last 10 years. Pronghorn antelope are seen on the allotment from spring through fall, the allotment is not accessible after the first heavy snow. Mule deer are seen rarely on the allotment however good summer and fall habitat exists in the upper northeast corner. This area of the allotment has abundant water, bitterbrush, mahogany and juniper. While there are no BLM records of bighorn sheep in the allotment they have been seen within several miles of potential habitat, outside the allotment. Therefore it is likely that the small amount of potential habitat (about 2,000 acres) in the allotment has some use. Occasionally elk or their sign have been found on or adjacent to the allotment. Suitable calving areas for elk occur along the Twelve-mile Creek corridor. While no golden eagle nests are known on the allotment both Great horned owls and red tailed hawks have been observed nesting.**

Bitterbrush plants within the allotment are showing positive trends in overall health but not in density. When compared to the mid 1980's, bitterbrush transects (the Rim Pasture and North Pasture) currently indicate that hedging of bitterbrush is decreasing within the allotment with a higher percentage of plants on both transects recorded as "little to no hedging" form class as opposed to "moderately" and "severely" hedged form classes. However, there is no indication that bitterbrush plants are reproducing on the allotment. Bitterbrush seedlings have not been recorded. Mature plants have always dominated transects data with more plants falling into the decadent category in recent surveys. Over all years, the average leader use of bitterbrush plants is less in the Rim Pasture (about 15%) compared to the North Pasture (about 23%). Average leader use has dropped from high of 30-50% in the mid 1980's and early 1990's to 0-2% in recent years

Most riparian corridors have a diverse age class of aspen, cottonwood, willow, rose and juniper. Older juniper stands occur throughout the allotment, often in association with rimrock. Point data indicates that sagebrush cover varies from 20-31% at assessed sites, which is within the range needed by sage-grouse. Mixed age groups

of sage-grouse have been repeatedly observed along Horse Creek, within several miles of the active lek and current sage-grouse sign has been found scattered throughout the allotment.

The lower canopy cover has changed to Poa sp. from deep rooted perennial bunch grasses. Poa species is not generally as tall or dense as bunchgrass, but conditions appear adequate for ground nesting songbirds as evidenced by recent observations over several years of ground nests found on the allotment.

Most of the landscape is held in public ownership with several private in-holdings of little to no development and good connectivity of riparian habitat exists in both Horse and Rock Creeks to allow animals to move along their corridors.

GIS data indicates that juniper is found on up to 60% of the allotment, but the soils data predicts that juniper could be found as an inclusion on about 50% of soils in the allotment.

8. IS adequate organic matter (litter and standing dead plant material) present for site protection and decomposition to replenish soil nutrients and maintain soil health? **No. Pedestals were observed throughout large areas of the allotment indicating sites are not adequately protected. However, Utilization records dating back to 2000 indicate that uplands utilization has not exceeded moderate levels and therefore a suitable amount of organic matter remains on a annual basis.**

PART III - SUMMARY OF STANDARDS ACHIEVEMENT DETERMINATION AND RATIONALE

A. DETERMINATION ON STANDARDS ACHIEVEMENT

As of the date of the completion of this form, an examination of the information listed in Part II and recent field visits, if applicable, indicate the following with regard to standards achievement for the area identified in Part I:

Standard	Determination on Standard Achievement (check appropriate box for each standard)
Upland Soils	☐ Met / ☐ Not met but progressing towards / ☑ Not met and not progressing towards / ☐ N/A
Stream Health	☑ Met / ☐ Not met but progressing towards / ☐ Not met and not progressing towards / ☐ N/A
Water Quality	☑ Met / ☐ Not met but progressing towards / ☐ Not met and not progressing towards / ☐ N/A
Riparian/Wetland	☑ Met / ☐ Not met but progressing towards / ☐ Not met and not progressing towards / ☐ N/A
Biodiversity	☑ Met / ☐ Not met but progressing towards / ☐ Not met and not progressing towards / ☐ N/A

B. RATIONALE SUPPORTING STANDARDS ACHIEVEMENT DETERMINATION

The Standard for Upland Soils: is not currently being met for the Nevada Cowhead Allotment #01113. The non-attainment of the standard was based on information/data from the 1999 Washoe County Soil Surveys - North Part, Nevada Cowhead Upland Health Assessments, Line-Point Intercept data, Soil Site Stability data, actual use data, composite utilization mapping and photos taken during the assessment process, along with the interpretation and analysis of the allotment management plan, monitoring data, and observations on the allotment since 1983. Utilization data has not been recorded higher than moderate during the last decade, indicating current levels of livestock use may not be contributing to conditions. Ocular observations made during the upland health assessments in the Nevada Cowhead Allotment verified pedestalling is active throughout large areas of the allotment, which indicates that current period of livestock use may be contributing to conditions.

Line Point Intercept data on three of the evaluation sites:

Site Average for the Claypan 10 - 14" ecological site.
64% Canopy Cover, 4% Bare Ground, 4% Basal Cover and 58% Litter Cover

Site Average for the Gravelly Claypan 10-12" ecological sites.
42% Canopy Cover, 10% Bare Ground, 8% Basal Cover and 50% Litter Cover

Site Average for the Scabland 10-14" ecological sites.
61% Canopy Cover, 8% Bare Ground, 9% Basal Cover and 63% Litter Cover

Line-Point Intercept and Gap Intercept transect data collected on the Nevada Cowhead Allotment in October 2008 is summarized in the tables in Attachment B and C, respectively.

The Standard for Stream Health: is currently being met for the Nevada Cowhead Allotment #01113. The standard achievement determination was based on data collected during the Riparian Functional Assessments, effectiveness monitoring of riparian habitat, and the 2003 fisheries habitat stream survey.

The Standard for Water Quality: is currently being met for the Nevada Cowhead Allotment #01113. The standard achievement determination was based on data collected during the 2003 fisheries survey, water temperature information from the late 1990's to present, and information from RFA's. The presence of trout, speckled dace, a diverse assemblage of aquatic macroinvertibrates and a vigorous and healthy vegetation component along riparian corridors supports a conclusion that this standard is being met.

The Standard for Riparian Wetland Areas: is currently being met for the Nevada Cowhead Allotment #01113. A variety of herbaceous and woody species and age classes were noted at most sites. Riparian and wetland vegetation as well as rock is controlling erosion, stabilizing stream banks, shading water areas to reduce water temperature, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater and increasing recharge of ground water that is characteristic for these sites. Vegetation surrounding seeps and springs is controlling erosion and reflects the potential natural vegetation for the site.

The Standard for Biodiversity: All indicators for biodiversity were achieved with exception of one. The indicator not met supports the conclusion that the upland soil standard is not currently being met. The presence of pedestals provided evidence that the upland soils are not stable; however livestock utilization has not been recorded higher than moderate in the past decade. This has provided sufficient litter and organic matter to provide for replenishment of nutrients. The non achievement of this indicator is not presently affecting the ability of habitats on the allotment to provide suitable conditions for a variety of biological processes.

PART IV - FOR THOSE STANDARDS NOT ACHIEVED, SUMMARY OF CONTRIBUTING FACTOR(S) DETERMINATION AND SUPPORTING RATIONALE

A. DETERMINATION OF CONTRIBUTING FACTORS

As of the date of the completion of this form, an examination of the information listed in Part II and recent field visits, if applicable, indicate that the following are contributing factors for failing to achieve the standards as indicated in Part III for the area identified in

Part I:
Non-achieved Standard (s) (from Part III):

FLPMA Principal or Major Uses		Information Reference (what data was reviewed - type and information date)
☑ Domestic Livestock Grazing	☑ actual grazing use	1984-2008
	☑ grazing "licenses"	
	☑ utilization records	1983-86, 1989, 1992, 1995, 1997, 2003, 2007
	☑ field notes / photographs	
	☑ other	
☐ Fish and Wildlife Development and Utilization	☐ utilization	
☐ Mineral Exploration and Development	☐ road building	
☐ Rights-of-way	☐ _____	
☐ Outdoor Recreation	☑ road building	Roads appear to have a slight impact on several riparian areas.
☐ Timber Production	☐ _____	

Other Events or Circumstances Considered		Information Reference (what data was reviewed - type and information date)
☐ Wild horse and Burro use	☐ census / distribution data	
	☐ other	
☑ exotic plant presence		Cheatgrass, Japanese brome
☐ insect impacts		
☐ abnormal fire frequency or lack of fire		
☐ abnormal climatic events		
☐ other _____		

CONTRIBUTING FACTOR(S) (LIST):

Period of livestock use is contributing to the development and proliferation of pedestals on native perennial plants

B. RATIONALE FOR CONTRIBUTING FACTOR DETERMINATION

PART V - BLM STAFF WHO REVIEWED THE INFORMATION AND RECOMMENDED PRIORITY FOR DEVELOPMENT AND IMPLEMENTATION OF APPROPRIATE ACTION TO MAKE SIGNIFICANT PROGRESS TOWARDS ACHIEVING THE STANDARD(S)

The following staff have participating in examining the information listed in Part II and in making the standard(s) achievement and contributing factor determination(s).

Elias Flores, Wildlife Biologist
Kathryn Dyer, Rangeland Management Specialist
Steve Surian, Sup. Rangeland Management Specialist

SIGNATURES:	TITLES:
_____	Wildlife Biologist
_____	Rangeland Management Specialist
_____	Sup. Natural Resource Specialist/Wild Horse Specialist

In the cases where the standards are not achieved and after considering all relevant information, we recommend that the priority for developing and implementing appropriate action to achieve standards in the area identified in Part I be (check one):

☑ high ☐ medium ☐ low .

We base our recommendation on the following ratings of the following factors:

Biological / Physical
Severity of resource impacts resulting from non-achievement of the standard - ☐ high ☑ medium ☐ low
Size of affected area -
Ability to arrest further degradation - ☐ easily done ☑ unknown ☐ difficult
Other:
Administrative
Proportion of federal land in the allotment - ☑ high ☐ medium ☐ low
Pending administrative actions (permit lease renewal / transfer, etc.) - ☑ pending ☐ not pending until FY ____
Other _____
Social
Anticipated cooperation of the permittee / lessee - ☑ expected ☐ not expected ☐ unknown
Legal requirements ☑ compelling ☐ not compelling
Other _____

Economic Considerations

PART VI - DOCUMENTATION OF THE INVOLVEMENT OF PERMITTEES, STATE AGENCIES AND THE INTERESTED PUBLIC IN MAKING STANDARDS CONFORMANCE DETERMINATION AND CONTRIBUTING FACTORS DETERMINATION

Indicate the occurrence of public participation (e.g. permittee, interested public, other Federal or State /local agency), or opportunities for public participation that pertains to the review of standards achievement and contributing factors (who, when, and conversation or meeting summary):

PART VII - AUTHORIZED OFFICER'S DETERMINATION AND PRIORITY FOR APPROPRIATE ACTION DEVELOPMENT AND IMPLEMENTATION

( ) Existing grazing management practices or levels of grazing use in the Nevada Cowhead Allotment #1100 promotes achievement of significant progress towards the Approved Northeastern California and Northwestern Nevada Standards and Guidelines for Livestock Grazing of July, 2000 and conforms with the Guidelines for Livestock Grazing Management.

(X) Existing grazing management practices or levels of grazing use in the Nevada Cowhead Allotment #1100 will require modification or a change prior to the next grazing season to promote achievement of the Approved Northeastern California and Northwestern Nevada Standards and Guidelines for Livestock Grazing of July, 2000 and conforms with the Guidelines for Livestock Grazing Management.

I have reviewed and concur with the determinations and supporting rationale regarding the achievement or lack thereof of rangeland health standards documented herein and, in the cases where standards are not achieved, the determination and rationale regarding the contributing factor(s) for failure to achieve the standards. I have determined that the priority for developing and implementing appropriate action to achieve significant progress to achieve standards for the area identified in Part I is (check one)

Priority: ☐ high ☑ medium ☐ low

Staff is directed to develop appropriate action for my consideration and implementation in accordance with this priority.

Pamela R. Colburn acting Field Manager _____ 2/12/2009

SURPRISE FIELD MANAGER DATE

COMMENTS:

SOURCES CITED:

Larrucea, Eveline; 2006; Bureau of Land Management Surprise Field Office Pygmy Rabbit (*Brachylagus idahoensis*) Survey

Attachment A

Rangeland Health Assessment Field Data Indicators Observed on the Nevada Cowhead Allotment, October 2008:

Claypan 10-14" evaluation site:

Rangeland Health Attributes		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	∑
Soils	Soils/Site Stability Indicators 1-9 & 11		**3**			**1,2,4,5,6,7, 8,9,11**	**10**
Hydrologic	Hydrologic Function Indicators 1-5, 8-11 &14		**3**	**10**		**1,2,4,5,8,9, 11,14**	**10**
Biotic	Biotic Integrity Indicators 8-9 & 11-17		**12**	**15**		**8,9,11,13, 14,16,17**	**9**

Gravelly Claypan 10-12" evaluation site:

Rangeland Health Attributes		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	∑
Soils	Soils/Site Stability Indicators 1-9 & 11				**3**	**1,2,4,5,6,7, 8,9,11**	**10**
Hydrologic	Hydrologic Function Indicators 1-5, 8-11 &14		**10**		**3,14**	**1,2,4,5,8,9, 11**	**10**
Biotic	Biotic Integrity Indicators 8-9 & 11-17		**12**		**14,16,17**	**8,9,11,13, 15**	**9**

Scabland 10-14", inclusion in Gravelly Claypan 10-12", evaluation site:

Rangeland Health Attributes		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	∑
Soils	Soils/Site Stability Indicators 1-9 & 11		**3**			**1,2,4,5,6,7, 8,9,11**	**10**
Hydrologic	Hydrologic Function Indicators 1-5, 8-11 &14		**3**		**10**	**1,2,4,5,8,9, 11,14**	**10**
Biotic	Biotic Integrity Indicators 8-9 & 11-17			**16**	**12,15**	**8,9,11,13, 14,17**	**9**

Attachment B

Line-Point Intercept Transect Data collected on the Nevada Cowhead Allotment, October 2008:

Claypan 10-14”

	Canopy Cover (%)	Bare Ground (%)	Basal Cover (%)	Litter (%)
Nevada Cowhead Transect Data	64%	4%	4%	58%
Ecological Site Reference Data	20 – 35% (canopy and basal combined)	± 40% Surface cover of rock fragments often >50%.	20 – 35% (canopy and basal combined)	Between plant interspaces (±25%) and litter depth is ±½ inch.

Gravelly Claypan 10-12"

	Canopy Cover (%)	Bare Ground (%)	Basal Cover (%)	Litter (%)
Nevada Cowhead Transect Data	42%	10%	8%	50%
Ecological Site Reference Data	foliar cover of perennial herbaceous plants about 20-30%. (canopy and basal combined)	± 40%	foliar cover of perennial herbaceous plants about 20-30%. (canopy and basal combined)	Between plant interspaces (± 10%) and depth of litter <1 inch.

The presence of Japanese Brome in this area increased the amount of litter, and decreased the amount of bare ground. The amount of litter was also increased due to the Nevada Cowhead Allotment being closed to grazing in 2008.

Scabland 10-14”, inclusion in Gravelly Claypan 10-12"

	Canopy Cover (%)	Bare Ground (%)	Basal Cover (%)	Litter (%)
Nevada Cowhead Transect Data	61%	8%	9%	63%
Ecological Site Reference Data	foliar cover of perennial herbaceous plants about 5-15%. (canopy and basal combined)	40-60%	foliar cover of perennial herbaceous plants about 5-15%. (canopy and basal combined)	Between plant interspaces (± 5%) and depth of litter ±1/4 inch.

Attachment C

Gap Intercept Transect Data collected on the Nevada Cowhead Allotment, October and November 2008:

Claypan 10-14”

Type of Gap	% of line in 1- 2 foot gaps	% of line in 2.1-3 foot gaps	% of line in 3.1-6 foot gaps	% of line in >6 foot gaps	Total % of 100 foot line in gaps
Canopy	13.5	7.9	12.9	2.3	36.6
Basal	16.6	6.1	21.4	22.8	66.9

Gravelly Claypan 10-12"

Type of Gap	% of line in 1- 2 foot gaps	% of line in 2.1-3 foot gaps	% of line in 3.1-6 foot gaps	% of line in >6 foot gaps	Total % of 100 foot line in gaps
Canopy	16.8	7.2	0	0	24
Basal	14.7	12.9	31.8	7.5	66.9

Scabland 10-14”, inclusion in Gravelly Claypan 10-12"

Type of Gap	% of line in 1- 2 foot gaps	% of line in 2.1-3 foot gaps	% of line in 3.1-6 foot gaps	% of line in >6 foot gaps	Total % of 100 foot line in gaps
Canopy	15	6.5	1.1	0	22.6
Basal	22.1	7.8	13.2	2.3	45.4